

CLAIMS

What is claimed is:

1. A bearing apparatus for a vehicle driving wheel comprising:
 - a double row rolling bearing;
 - a wheel hub integrally formed with a wheel mounting flange at one end and having a cylindrical stepped portion of smaller diameter axially extending from the other end of the wheel hub;
 - an inner ring fitted on the stepped portion of the smaller diameter of the wheel hub, said inner ring being secured on the wheel hub through a caulked portion formed by plastically deforming the end of the stepped portion radially outwardly;
 - an outer joint member having a shoulder adapted to be abutted to the end surface of the caulked portion and a stem portion axially extending from the shoulder, the outer joint member being inserted in the wheel hub via a serration fitted portion to attain a detachable engagement with the wheel hub;
 - a pre-loading means formed in the serration fitted portion between the stem portion of the outer joint member and the wheel hub;
 - a fastening means for combining the wheel hub and the outer joint member; and
 - a releasing means adapted to be arranged on the wheel hub for removing the fastening means.
2. A bearing apparatus of claim 1 wherein the serration fitted portion is pre-loaded by providing the serration of the stem portion of the outer joint member with a helix angle of a predetermined angle relative to the axis of the stem portion.

3. A bearing apparatus of claim 1 wherein the outer end surface of the wheel hub is formed with an internal thread, and the wheel hub and the outer joint member are united using a plate having a circular aperture formed at a position corresponding to said internal thread and a central aperture formed with an internal thread, abutting the plate on said outer end surface of the wheel hub, and finally screwing a securing bolt into an internal thread formed in said shaft of the outer joint member through the central aperture of the plate.

4. A bearing apparatus of claim 1 wherein the releasing means includes a releasing jig formed with an external thread, and an internal thread engaging the external thread of the releasing jig formed on a pilot portion of the wheel hub.

5. A bearing apparatus of claim 1 wherein the outer end portion of the wheel hub is formed with an annular recess having a tapered internal circumferential surface, the annular recess receives a fastening member formed with a serration on its inner circumferential surface, and the diameter of the fastening member is reduced by screwing a securing bolt into an internal thread formed in the stem portion of the outer joint member.

6. A bearing apparatus of claim 5 wherein the fastening member is a split-ring having one slit on its circumference.

7. A bearing apparatus of claim 5 wherein the fastening member is formed as a plurality of circumferentially separated parts.

8. A bearing apparatus of claim 5 wherein a plurality of slits are formed on either the inner or outer circumferential surface of the fastening member.

9. A bearing apparatus of claim 1 wherein an elastic ring is fitted in an annular space formed between the end surface of the inner ring and the shoulder of the outer joint member, one end of a pulsar ring arranged on the shoulder of the outer joint member engaging the elastic ring.